

**REMARKS**

Claims 1-13 are now pending in the above-identified application. No claims have been amended.

New claim 13 is supported in the specification by Fig. 2. No new matter has been presented by these amendments, and no new issues have been raised. Reconsideration of the above-identified application in view of the preceding amendments and the following remarks is respectfully requested.

***The Claimed Invention***

In brief, the claims cover a process for producing leather-like sheet wherein a leather-like sheet is bonded directly to the base material (fibrous substrate) **without the use of any adhesive**. In particular, resin composition (C) is heated and melted, and bonded to either a releasable substrate (D) or a fibrous substrate (E) to form a leather-like skin layer. The applied surface of the resin composition is then bonded to either a fibrous substrate (E) or a releasable substrate (D). The releasable substrate (D) can be released easily from the leather-like sheet. For example, when the releasable substrate (D) is released for preparing the end product optionally, a skin-like layer composed of a resin composition (C) exists as an outer surface of the end product.

That is, the leather-like skin layer (resin composition) is directed bonded to the base material (fibrous substrate). Furthermore, the resin composition (C) contains a colorant (B), which contains a polyol with a number average molecular weight within a range of 1,000 to 20,000 as a vehicle (B-1) and a pigment (B-2).

***Claim Rejections – U.S.C. §103***

**In the Office Action, the Examiner rejected Claims 1, 4, 5, 8, and 10-12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2003/0017322 to Kim, in view of U.S. Patent Application Publication 2002/0018892 to Satake, et al.**

Kim discloses a process for manufacturing an artificial leather sheet structure wherein a transfer sheet is coated with a film material, a porous layer is formed thereon, and a base material is directly press-fitted to the porous layer. **Kim** fails to disclose the claimed invention because the reference does not teach a base material bonded directly to a leather-like skin layer (resin composition). Instead, **Kim** discloses that the artificial leather base material and the leather-like skin layer are separately prepared and, subsequently, the layers are bonded together **by using an adhesive**. With respect to using **adhesive** to paste together the artificial leather base material and the leather-like skin, **Kim** discloses aqueous polyurethane or moisture-setting type hot melt polyurethane as examples:

As the adhesive 9, for example aqueous polyurethane or moisture-setting type hot melt polyurethane is used. A moisture-setting type (moisture-crosslinking type) compound refers to an organic compound which is polymerized by chemical reaction with water.

(Kim, [0054]). Although **Kim** discloses aqueous polyurethane and moisture-setting type hot melt polyurethane, **these polyurethanes are not used for forming a leather-like skin layer but for bonding a base material and a leather-like skin layer**. Without disclosing direct bonding of the base material to the leather-like skin material without the use of an adhesive, **Kim** cannot be said to teach the claimed invention.

In addition, **Kim** fails to teach a leather-like film layer bonded directly to the base material. Instead, a porous layer separates the film layer and the base material. In the Office Action, it was asserted that **Kim** discloses “a porous layer . . . consistent of the hot melt polyurethane.” (Office Action, p. 3, Ins.18-19). However, the Office Action further described, correctly, that the porous layer is sandwiched between the leather-like skin layer and the base material:

[A] process is taught by **Kim** whereby a leather-like sheet can be produced by coating a film layer made of a film material on a peelable transfer sheet having a convexo-concave shape . . . forming a porous layer on the film layer; press-fitting a base material on the porous layer in an undried state; and peeling off the transfer sheet([0016]).

(Office Action, p. 3, Ins. 13-17). That is, **Kim** fails to disclose a hot-melt polyurethane layer positioned as an outer surface of the leather-like sheet. Therefore, given that the porous layer is positioned **between** the leather-like skin layer and the base material, there is absolutely no teaching of a porous layer positioned as an outer-surface of the leather-like sheet. In light of the fact that the leather-like sheet of **Kim** is structurally different from the claimed invention, there is no way **Kim** discloses or even suggests the claimed invention.

With respect to the claimed colorant (B), it was asserted in the Office Action that, although **Kim** fails to disclose the claimed colorant, **Satake** discloses coloring an aqueous adhesive, and that the claimed number average molecular weight of the polyol (B-1) is obvious. Quite the opposite, **Satake** fails to supply the missing element of the claimed colorant for at least a couple of reasons.

First, **Satake** fails to disclose a leather-like skin layer formed by a resin composition containing a colorant. Instead, **Satake** discloses a colorant to be used with an **adhesive**, not a leather-like skin layer:

In order to color the aqueous adhesive composition of the present invention, it is preferable to use aqueous dispersible colorants, which are obtained by coating the surfaces of pigment particles with an aqueous dispersible resin. Colorants containing pigment particles coated by an [sic] water-borne polyurethane resin are more preferable as the aqueous dispersible colorants. The most preferable colorants are a series of colorants in which pigment particles are coated with an [sic] water-borne polyurethane resin obtained by using dimerdol or dimer-acid-type polyesterpolyol.

(**Satake**, [0052]).

Second, **Satake** fails to disclose a colorant containing a polyol as a **vehicle** (B-1) and a pigment (B-2). Instead, in **Satake**, the pigment is coated with the water-borne polyurethane resin, *see supra*. Moreover, **Satake** discloses that polyols are raw materials for forming a water-borne polyurethane resin. **Satake** discloses a water-borne polyurethane resin (A) included in the adhesive. Water-borne polyurethane resins of Examples 1 to 4 disclosed on page 6 of **Satake** are resins which are produced by chain extension using a urethane prepolymer having an isocyanate group at the end position. Hydroxy groups are not included in the water-borne polyurethane resin (A), and **said resin (A) of Satake is not polyol**. There is no disclosure in **Satake** that a polyol having a number average molecular weight of 2000 to 8000 is used as a vehicle, unlike the claimed invention.

Furthermore, urethane polymer is not equivalent to the claimed polyol in terms of a vehicle for pigment. As shown in Comparative Example 5 of the present invention, substituting urethane polymer for polyol as a vehicle for pigment resulted in poor color uniformity and significant color irregularities/discoloration. (Specification, Table 5, p. 59). The claimed polyol is not obvious given the unexpected results shown by polyol as a pigment vehicle in comparison with urethane polymer.

Therefore, given that **Satake** fails to disclose a leather-like skin layer formed by a resin composition containing a colorant, and a polyol used a vehicle for a pigment, it cannot be said

that **Satake** discloses the claimed polyol.

As discussed above, **Kim** fails to disclose, teach or suggest that a process for producing a leather-like sheet which comprises the steps of heating and melting a moisture-curable polyurethane hot-melt resin composition which contains a hot-melt urethane prepolymer and a colorant; and applying said heated and melted resin composition to either (i) a releasable substrate and then bonding the coated surface to a fibrous substrate, or (ii) a fibrous substrate and then bonding the coated surface to a releasable substrate. **Kim** and **Satake** both fail to disclose, teach, or suggest a colorant which contains a pigment and a polyol as a vehicle which has a number average molecular weight within a range from 1,000 to 20,000. Accordingly, the combined disclosure of **Kim** and **Satake** fail to render obvious the invention recited by claims 1-13. The applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a).

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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